

The Cost Accounting System of the Fraunhofer-Gesellschaft

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A Requirements and fundamentals

A.1 Cost accounting requirements

In accordance with the decision reached by the Federal Cabinet on 5 October 1973, the Fraunhofer Gesellschaft is obligated to settle its activities on a *cost basis, based on full costs*. The content of the matter of the decision was coordinated with the participating German Government Departments BMF (Federal Ministry of Finance), BMVg (Federal Ministry of Defence), BMWi (Federal Ministry of Economics and Technology) and BMBF (Federal Ministry of Education and Research). The German Federal Accounting Office was also involved. Cost accounting has been introduced at all Fraunhofer institutes and institutions since 1978, and it has been further developed since that time on the basis of the general conditions. The Federal Government's Cabinet decision was most recently confirmed in the meeting of the Fraunhofer Policy Committee on 17 February 2009.

The cost accounting results in a causation-related assignment of all expenditures and expenses to the projects according to the following principles:

- **Self-costs:** The cost accounting contains exclusively cost items offset in the same amount by expenditure or expenses (self-costs). There are correspondingly no costing-based costs (costing-based interest, costing-based profit and the like) included. The annual post-calculation always guarantees the complete reconciliation of the expenditures or expenses according to the budget and the costs according to the cost accounting.
- **Full costs:** The cost accounting results in the assignment of all costs incurred by the institute to the projects as the cost objects (full costs). Because the Fraunhofer institutes provide their activities exclusively in the form of projects, no other cost objects are available as funding sources.
- **Uniformity of the cost accounting:** The cost accounting performs both outwardly directed functions (costing and settlement of projects with respect to funding bodies and clients, as well as their audit by third parties) and internal functions (planning, financial controlling and control of the institutes and their projects). These functions can only be performed if the cost accounting is uniformly applied to all projects.

The Fraunhofer-Gesellschaft cost accounting must satisfy the following requirements in this connection:

- Public laws concerning controlled prices and stipulations of public project sponsorship
The Fraunhofer cost accounting system is adapted to the following requirements from the Federal and *Land* Governments resulting from the public laws concerning controlled prices. It complies with the rules stipulated in Legal Ordinance VO PR 30/53 and the supplementary price regulations (LSP/Guidelines for Determining Prices on the Basis of Self-costs).
- Stipulations of the EU Community Framework for State Aid for Research and Development and Innovation (R&D&I)
Its cost and activity accounting are necessary steps that allow Fraunhofer to satisfy the European competition rules that have applied to all companies, institutions and universities involved in the research sector since the beginning of 2009.

A.2 Fundamentals of cost accounting

The cost accounting fundamentally treats all projects equally

- The cost rates are always established on the basis of all projects, regardless of the financing, which means that internal research projects are also included.

- The same cost rates are always consulted for all of an institute's projects. Exception: the "Community Framework Mark-up" as an additional mark-up only for industrial projects, in order to comply with the requirements of the Community Framework for State Aid for Research and Development and Innovation.¹
- There is consequently no systematic advantage or disadvantage given to certain funding bodies/clients.

The rule "costs = expenditure (= expenses)" always applies to the cost rates

- The post-calculation ensures that only costs based on actual expenditures/expenses in the respective fiscal year are taken into account in the cost rates (costs = expenses).
- All projects are fundamentally reassessed as a part of the annual financial statement and are settled according to the post-calculated cost rates.

The cost rates are directly and comprehensibly related to the projects

- Each institute is fundamentally represented in the cost accounting in its own cost centre; physically separate sub-institutes or branch labs are represented, if applicable, in additional cost centres (around 100 active cost centres).
- The cost rates used for settlement consequently always reflect the institute-specific cost structures.
- The cost rates include exclusively costs that have actually been incurred in the respective year of project processing/settlement (cost assignment by period).

Time records as a basis for assigning the costs to projects

- All employees must account for their hours each month in a timesheet (ZEB).
- The timesheet mandatorily calls for full recording of the pay-scale annual working hours of each employee (full time, typically 250 working days x 7.8 hours = 1.950 hours/year).
- These maximum annual hours are apportioned to the following categories by means of the time recording:
 - Project activities (allow the direct assignment of personnel costs to the projects)
 - The activities to be attributed to the overhead costs (incorporated into the personnel overhead costs)
 - Holiday and sick times (are taken into account in the fringe benefits)

There is a strict separation of direct costs and overhead costs

- The extent to which an employee has worked for projects or has taken on assignments to be attributed to the overhead costs is recorded exactly and completely in the time records.
- For the booking of each receipt or other document, it is mandatorily necessary that there be a statement of whether or not the expenditure is to be assigned to a particular project or to the overhead costs of the cost centre.
- Double charging is excluded.

¹ The "Community Framework Mark-up" essentially reflects the depreciations on publicly financed buildings and equipment that are not taken into consideration when determining the depreciation mark-up rate for publicly funded projects in order to avoid duplicated settlement.

B Establishing the cost rates

The cost rates of the Fraunhofer-Gesellschaft based upon the principles presented above are established according to the system described in the following:

Hourly rate	(2) Mark-up rate	XX%	Depreciation
		XX%	Personnel overhead costs
		XX%	Non-personnel overhead costs
Full costs	(1) Personnel costs (inc. FB)	XX%	Fringe benefits (FB)
		XX%	Hourly rate

- Base factors for the Fraunhofer cost rates are (1) the **personnel costs (including fringe benefits)**. Section B.1 contains a detailed description of the expenditures/expenses that are included in the personnel costs and the system used for establishing the individual personnel cost rates.
- The **overhead mark-up rates** (non-personnel overhead costs, personnel overhead costs and depreciation) are added to the personnel cost rates including fringe benefits as a base factor, resulting in the hourly rate on a full cost basis. Section B.2 contains a detailed description of the expenditures/expenses that are included in the overhead costs and the system used for establishing the overhead mark-up rates.
- The **post-calculation** ensures that the hourly rates used for project accounting always include only the actual expenditures/expenses of the respective institute. Hourly rates in the preliminary costing used for the project costing are - on the basis of the post-calculation of the last completed fiscal year - updated by the pay scale or structural changes forecast for the subsequent years.

B.1 Establishing the personnel cost rates

The basis for the remuneration of Fraunhofer employees is formed by the *Tarifvertrag für den Öffentlichen Dienst (TVÖD - Collective Agreement for the Public Service)*. The *Besserstellungsverbot gegenüber Angestellten des Bundes* (prohibition against unwarranted financial enrichment as compared to federal employees) obligates Fraunhofer to apply this agreement. The personnel expenditures resulting on the basis of this regulation are included when establishing the personnel cost rates. Specific personnel cost rates are established for each cost centre. These personnel cost rates are composed of an average rate per remuneration group and a mark-up rate for fringe benefits per cost centre.

- The allocation of personnel costs to the projects using the average rates offers the advantage that for each client, the same personnel cost rate is charged for activities that are provided by employees in a certain qualification level. This average rate is transparent, fair and free of chance happenings, such as would be unavoidable if individual salaries were to be used for the settlement.

- The establishment of a fringe benefit mark-up rate that is uniform in an institute offers the advantage that, in particular, a random increase of illnesses in one TVÖD level does not lead to a distortion of the hourly rates, such as would be unavoidable if there were greater differentiation.
- Possible deviations between the personnel costs charged according to the post-calculated average rates and a calculation of the expenses on a person-by-person basis according to pay slips are, as a rule, to be neglected over the course of a project. Numerous audits have also confirmed this.

The **personnel cost rates** are established in three steps:

First step: Establishment of the personnel cost rates (without fringe benefits (FB)) for each remuneration group

Personnel cost rate (w/o FB) by remuneration group	=	Sum of bookings for personnel costs (without FB) by remuneration group
		Sum of total hours according to time recording by remuneration group

- The personnel cost rates (without fringe benefits) include the gross salaries paid out to the employees, with the exception of the annual benefit ("Christmas bonus") that is included in the fringe benefits.
- For each cost centre, a separate average hourly rate is established for each qualification level (= 16 TVÖD levels plus 2 non-pay-scale levels for employees in accordance with the ATB (non-pay-scale remuneration) as well as members of the institute management paid according to the W remuneration system (remuneration for faculty members/professors)).
- In each case, the post-calculated average rates are established from the salaries actually paid to the employees of the respective TVÖD level in an institute, divided by the number of hours actually worked by these employees.

Second step: Establishment of the mark-up rate for fringe benefits (FB) for each institute/cost centre

Mark-up rate for fringe benefits	=	Sum of bookings for fringe benefits
		Sum of bookings for personnel costs (without FB)

The fringe benefits include the costs for all social expenditures stipulated by law or in the TVÖD. These expenditures are collected in a fringe benefit clearing centre and a mark-up rate is established on the personnel costs (without fringe benefits).

The fringe benefits include the following expenditures:

- Employer's contributions to the statutory social insurances (Retirement, unemployment, health and long-term care insurance)
- Paid holiday and wage continuation in the event of illness (The costs for these are established on the basis of the hours of absence for holiday/illness documented in the time records, multiplied by the hourly rates for the respective remuneration group established in the first step on the basis of the total hours (including holiday/illness)).

- Employer's contributions to the VBL (Pension Institution of the Federal Republic and the Federal States) supplementary benefits in accordance with the TVÖD
- Annual benefit (Christmas bonus) in accordance with the TVÖD
- Contribution to statutory accident insurance, compensation levy for non-employment of the severely disabled
- Other payments based on the collective agreement or laws (Maternity benefit allowance, flat rate for extra hours, death benefit and the like)

Third step: Establishing the personnel cost rates including fringe benefits (FB)

$$\begin{array}{l}
 \text{Personnel cost rate} \\
 \text{(inc. FB)} \\
 \text{by remuneration} \\
 \text{group}
 \end{array}
 =
 \begin{array}{l}
 \text{Personnel cost rate} \\
 \text{(without FB)} \\
 \text{by remuneration} \\
 \text{group}
 \end{array}
 \times
 \begin{array}{l}
 \text{Mark-up rate} \\
 \text{1 + for fringe benefits} \\
 \text{Institute/cost centre}
 \end{array}$$

The fringe benefits are proportionally added to the personnel cost rate (without fringe benefits) established in step 1 by means of the fringe benefit mark-up rate.

B.2 Establishing the mark-up rates

The overhead costs reflect an institute's specific cost structure and correspond to the actual expenditures/expenses

- Mark-up rates are formed for each cost centre for the personnel overhead costs and non-personnel overhead costs, as well as the depreciation. These mark-up rates reflect the overhead cost structures for the specific institute.
- The costs booked in the personnel overhead costs and non-personnel overhead costs have accrued exclusively in the relevant cost centres in the respective year.
- The depreciations booked in the depreciation rate are established exclusively on the basis of such investments that the institute has made from its own funds and that have not specifically been financed by third parties. The establishment of the depreciations is done exclusively on the basis of actual expenditure (distributed over five years).
- The mark-up for the Community Framework is additionally included only in industrial projects. This mark-up also takes into consideration the depreciations on investments financed with separate project or development funds.

The expenditures/expenses registered in the overhead costs result exclusively in association with the performance of the institute's research projects

- According to its Articles of Association, Fraunhofer-Gesellschaft is exclusively aimed at the promotion of applied research, and the business model of the institutes is aimed exclusively at carrying out research projects. Each institute is the sum of its research projects.
- Other activities, such as found in universities (teaching) or companies (production, sales), are not carried out within the Fraunhofer-Gesellschaft.
- In the framework of the annual financial statement, auditors additionally examine whether or not all expenses were necessary and correspond to the principles of efficiency and economy.

The overhead costs are charged to the projects as a mark-up rate to the project personnel costs

- The overhead costs are established on the basis of all project hours worked (public, industrial, internal research).
- The research work of the institute employees represents the actual value creation in research projects. The expenditures/expenses contained in the overhead form the prerequisites or framework that allows the institute employees to carry out their research work. From this is derived the use of the personnel costs accruing to the projects (project personnel costs) as a reference value for establishing the overhead mark-up rates. There is consequently always a direct project reference.
- Each project bears its own project-specific share of the overhead. The allocation of the overhead to all projects ensures that with its specific share in the institute's total value creation (reflected in the project personnel costs), each project bears the corresponding share in the overhead necessary for this value creation.

The Fraunhofer overhead rates are based exclusively on actual expenses. They are logically and transparently established and are distributed to the projects on a causation-related basis.

B.2.1 Personnel overhead costs

The costs for all activities that cannot be directly allocated to individual projects as direct costs are included in the cost rates of the Fraunhofer institutes via the mark-up rate for personnel overhead costs.

- Management assignments
Carrying out the assignments of the institute administration, management and supervision of working groups
 - Administrative activities
Finances, accounting and controlling, human resources, purchasing, contracts, etc.
 - Infrastructure services
Facility management, maintenance, repair and servicing jobs, IT services
 - Cross-sectional tasks
Activities in areas such as occupational health and safety, quality management, information management
 - Further and advanced training
Participation in further and advance training programmes (outside of research projects)
 - Committee activities
Participation in committees required by law or by the Articles of Association (e.g., Works Council)
- ⇒ Without the support activities subsumed in the personnel overhead costs, it would not be possible to carry out research projects.

Establishing the personnel overhead costs rate

$$\text{Mark-up rate for personnel overhead costs} = \frac{\text{TS hours, personnel overhead costs x personnel cost rate (inc. FB) by RG}}{\text{Project personnel costs inc. FB}}$$

- Both the project activities and the activities that are to be allocated to overhead are recorded exactly in the timesheets (TS).
 - The timesheet hours established in this way are then evaluated at the respective average rate (100 hours of a remuneration group (RG) 14 employee correspond to 100 x average RG14 rate, 160 hours of an RG8 employee correspond to 160 x average RG8 rate).
 - In this way, the personnel overhead costs, with the addition of the fringe benefit rate of the institute, are calculated as euro amounts. These are put in relation to the direct project-related personnel costs (personnel overhead costs mark-up rate in %).
 - Like all cost rates at Fraunhofer, the post-calculation for the personnel overhead costs rate is done after the conclusion of the fiscal year and the project accounts during the fiscal year are adjusted correspondingly.
- ⇒ The personnel overhead costs contain exclusively costs which are offset by expenses in the same amount (no costing-based costs).

B.2.2 Non-personnel overhead costs

All material costs that cannot be directly allocated to individual projects as direct costs are included in the cost rates of the Fraunhofer institutes via the mark-up rate for non-personnel overhead costs. The essential cost items in non-personnel overhead costs are:

- Maintenance, servicing and repairs
- Energy costs
- Renting and leasing
- Material costs
No procurement directly for projects, e.g., for the maintenance of buildings and systems
- External services
No procurement directly for projects, e.g., services for the maintenance of buildings and systems
- Allocation of services of central office
That are provided centrally in the Fraunhofer central office instead of decentrally at the individual institute due to legal, economical or organizational reasons
- Patent costs
- Telephone, post and telecommunication fees
- Travel expense
That cannot be allocated to specific projects
- Costs for further and advanced training
That cannot be allocated to specific projects

⇒ The costs subsumed in the non-personnel overhead costs represent a prerequisite for successfully carrying out research projects.

Establishing the non-personnel overhead costs rate

$$\text{Mark-up rate for non-personnel overhead costs} = \frac{\text{Sum of bookings for non-personnel overhead costs}}{\text{Project personnel costs inc. FB}}$$

- The abovementioned non-personnel overhead costs are added up and put into relation to the direct project-related personnel costs (non-personnel overhead costs mark-up rate in %).
 - Like all cost rates at Fraunhofer, the post-calculation for the non-personnel overhead costs rate is done after the conclusion of the fiscal year and the project accounts during the fiscal year are adjusted correspondingly.
- ⇒ The non-personnel overhead costs contain exclusively cost items offset by expenses in the same amount (no costing-based costs).

B.2.3 Depreciations on investment equipment

Depreciations on investments are incorporated into the cost rates of the institutes via the depreciation rate.

Establishing the assessment basis

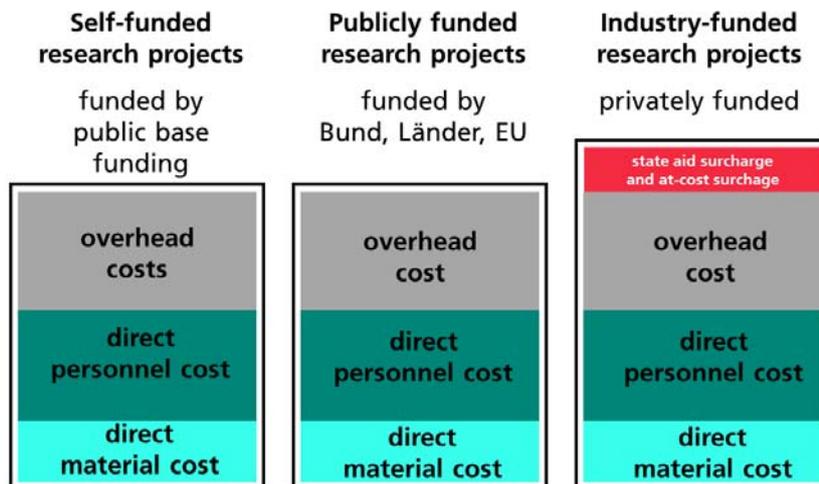
- Exclusively those **investments** that the institute has financed **from its own funds** from the current budget are **taken into consideration** for the calculation of the depreciation rate. Typically included here are the institute's IT investments, general replacement purchases and smaller and medium-sized new investments.
 - **Not taken into consideration** are all investments that were made in the framework of projects from project funds (= **project-financed investments**, special operating resources, regardless of whether or not the projects involved are publicly or privately financed).
 - Not taken into account are investments in the construction and original equipment area, for which additional funds are provided by the host Länder in the framework of development measures.
- ⇒ Due to the fact that the assessment basis for the depreciation is limited to "generally-financed ongoing investments" and consequently project-financed investments as well as development investments are not considered, it is ensured that the funding bodies in the framework of public projects do not remunerate multiple times for the equipment use (no risk of double charging).

Establishing the depreciation rate

$$\text{Depreciation rate} = \frac{\text{Depreciation on generally-financed ongoing investments}}{\text{Project personnel costs inc. FB}}$$

- The expenses for the generally-financed ongoing investments of the past five years are added together and uniformly depreciated with an average service life of five years at 20% p.a.
 - Comparable to the personnel and non-personnel overhead costs, the depreciation established in this way is related to the direct project-related personnel costs (depreciation mark-up rate in %).
 - Like all cost rates at Fraunhofer, the post-calculation of the depreciation rate is done after the conclusion of the fiscal year and the project accounts during the fiscal year are adjusted correspondingly.
- ⇒ By taking into consideration exclusively expenses actually incurred for the investments in question, it is ensured that no costing-based costs are applied when establishing the depreciation.
- ⇒ Establishing the depreciation rate is based on the cameralistic principle of the expense statement, with the special case that the expenses of the last five years are averaged. Averaging over five years is a prerequisite for a causation-related re-financing of the investments by the project partners across the average life cycle of the investments made from the own funds.

B.2.4 Additional surcharges on industry-funded projects



In a first step, industry-funded projects are calculated applying the same cost rates for overhead costs as used for the calculation and invoicing of publicly funded projects.

In a second step, additional cost items are included in the calculation of industry-funded projects in order to ensure compliance with European state aid rules and avoid the cross-subsidization of industry-funded projects with public funds:

State Aid Surcharge

The state aid surcharge includes depreciation on buildings and equipment financed by dedicated public funds. These depreciation items are not included in the depreciation surcharge applied for publicly funded projects in order to avoid double-funding issues.

The basis for calculating the state aid surcharge are project personnel costs of all projects, while application is limited to industry-funded projects. The state aid surcharge is calculated per cost center reflecting the investment intensity of the specific cost center.

At-cost surcharge

This surcharge covers the European state aid rule demanding a reasonable profit margin to be included in industry-funded projects as well as calculated interest on public funds received for investments.

The basis for calculating the state aid surcharge are total project costs and the rate is consistent for all cost centers (as of 01/2018 set at 5%).

C Quality assurance

C.1 Special feature of the post-calculation

- The post-calculation is the special feature of the cost accounting at Fraunhofer. This post-calculation carries out a re-calculation of the cost rates from the preliminary costing at the conclusion of the fiscal year, exclusively on the basis of the expenditures or expenses actually made. Due to the post-calculation, the costs used in the cost accounting can be balanced with the expenditures from the profit and loss statement, except for rounding differences.
 - The post-calculation is summarily audited by an auditing company in the framework of the annual financial statement by means of a balancing of the costs and the expenses. Together with the auditor's annual confirmation, according to which the costs agree with the expenditure according to the profit and loss statement, it is ensured that only expenditures affecting expenses are incorporated in the cost rates.
- ⇒ Because of this special feature, Fraunhofer's cost accounting is able to satisfy the requirements of the cameralistic expense statement within classic cost accounting. The expense reimbursement principle is therefore completely fulfilled by Fraunhofer's procedure.

C.2 Essential content of attestations

- Fraunhofer's cost accounting and costing system were audited by the auditing company PWC Deutsche Revision in the framework of a system audit in 2003. It was determined on this occasion that:
 - The cost rates and mark-up rates were calculated in a comprehensible manner.

- The personnel and non-personnel expenditures in the profit and loss statement of the institutes correspond, except for minor rounding differences, to the total costs of the post-calculation, including the direct costs.
- The post-calculation of the accrued non-personnel and personnel expenditures to the individual projects was done properly.
- The cost rates from the post-calculation correspond to the LSP (Guidelines for Determining Prices on the Basis of Self-costs).
- The cost rates of the Fraunhofer institutes are audited annually by the annual financial statement auditor in the framework of the "audit of project accounts". This audit takes place in the framework of the annual financial statement of the Gesellschaft, which is accepted by the BMBF (German Federal Ministry of Education and Research) as the responsible allotment authority. The annual financial statement auditor is charged with examining the reports on the expenditure of funds for projects financed from funds from the BMBF or from other public funds with regard to the included non-personnel and personnel costs, as well as the costing. Most recently, it was ascertained in the "Audit of Project Accounts " audit report for the year 2009 that:
 - "The expenditures of the profit and loss statement ... correspond to the expenses of the institutes. The post-calculation can be reconciled with the expenses of the operation of the institutes except for minor deviations."
 - "The post-calculation established as of the end of the year for the individual institutes forms the basis for the accounting of projects with self-cost reimbursement prices."
 - "Costing-based cost components are not included in the cost rates."